NEWS
In School Health
SCHOOL HEALTH UNIT Fall 2002

EMERGING INFECTIOUS DISEASE ISSUES: NEW CHALLENGES FOR SCHOOLS AND COMMUNITIES

Previous editions of *News in School Health* have focused on the unique relationship of the school and infectious disease control: (1) Health education programs offer opportunities to teach children how to avoid exposure to infectious diseases; (2) Entry into kindergarten, as well as into seventh grade, provide important population-based safety nets to ensure that students are immunized and (3) Reductions in communicable diseases and improved student attendance enhance the educational process.

Yet as we enter the 21st century, new challenges face school-based infection control programs. They include concerns among parents about vaccine safety, confusion about immunization requirements and medical / religious exemptions, and the role of the school in responding to a bioterrorism event.

Vaccination is considered by public health experts to be 1 of the 10 greatest public health achievements of the 20th century. As a result, there has been an overall 99% reduction in the number of cases of vaccine preventable diseases reported in recent years. Also as a result, many parents, providers, and school health personnel have not witnessed the devastation caused by polio, diphtheria, pertussis, measles and congenital rubella infection. In addition, some may not believe that varicella is a serious childhood illness, despite data to the contrary.

As vaccine preventable diseases have dramatically decreased, parental concerns about vaccine safety have increased. Some parents also believe that children are getting 'too many' immunizations and that immunizations could weaken their immune systems. A recent survey of school health personnel, including some in Massachusetts, identified similar concerns.

Today much information about vaccines and their possible side effects is available through the Internet and lay press. However, this information may be anecdotal and without scientific basis. Fortunately, many published studies and expert committees reviewing available data have not yet found credible associations between vaccines and conditions such as multiple sclerosis, diabetes, autism, or other chronic diseases, nor any evidence that vaccines weaken the immune system. Additional studies are underway to further our knowledge about vaccines and other potential unidentified adverse events.

Traditionally, school entry has been a time to identify children who are not fully immunized. It is also an ideal opportunity to identify students whose religious or medical exemptions may actually be due to parental concerns about immunizations. In order to respond to these concerns, school nurses and physicians must be knowledgeable about the current vaccine safety issues, as well as the latest scientific information.

In the 21st century, school heath personnel will also need to become familiar with the continually evolving information about anthrax, smallpox and other bioterrorism (BT) agents, as well as other infectious disease emergencies. They also need to become involved with their local planning committees, as schools will surely play a major role in any community-based response, including immunization efforts.

Because school nurses and other school-based health personnel have daily opportunities to talk with families, they are in a unique position to emphasize the importance of infection control techniques, immunizations, and emergency readiness. Armed with current knowledge about these issues, they can be a powerful force in promoting the health and safety of the Commonwealth's children.

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"As we enter the 21st century, never have so many children benefited from vaccination. Yet many children in our state have not received all the recommended vaccines and remain unprotected against serious diseases. We must strive to help parents and providers understand the safety and benefits of modern vaccines and the consequences of under-vaccination. The problem is not that children get too many shots, but that there are too many infections we do not yet have effective vaccines to prevent."

Alfred DeMaria, Jr., M.D., Assistant Commissioner, Bureau of Communicable Disease Control, Massachusetts Department of Public Health

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IMMUNIZATION RECORDS OF HOMELESS STUDENTS:

The federal McKinney-Vento Homeless Assistance Act, reauthorized in January 2002, ensures educational rights and protections for children and youth experiencing homelessness. The Act clearly states that if a *homeless student* does not have immunizations or immunization or medical records, the Homeless Education Liaison must immediately assist in obtaining them, and the student must be enrolled and permitted to attend school in the interim. *(This applies to homeless students only.)* Each school district must appoint a Homeless Education Liaison. School nurses should request that the Homeless Education Liaison obtain the student's immunization records from the school he/she last attended. If you do not know your school's liaison, or if you have questions concerning the rights of the homeless, please call Peter Cirioni, Massachusetts Department of Education (MDOE), at (781) 338-6294 or email pcirioni@doe.mass.edu.

AMENDMENT REGARDING CARRYING OF INHALERS:

Section 54B of Chapter 71 of the Massachusetts General Laws has been amended by adding the following paragraph: "Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with asthma or other respiratory diseases from possessing and administering prescription inhalers in accordance with Department of Public Health regulations concerning students' self-administration of prescription medications." This means that a school district may not have a *blanket* prohibition for self administration of prescription inhalers by students with asthma or other respiratory diseases. *Please see the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000), specifically the section on Self-Administration of Prescription Medications (210.006) for further information about self-administration by the individual student.*

CLARIFICATION OF MASSACHUSETTS STUDENT RECORD REGULATIONS AS THEY PERTAIN TO TRANSFER OF SCHOOL RECORDS:

According to 603 CMR 23.07 (g), school systems are authorized to send student records directly to a public school to which a student seeks or intends to transfer, without the consent of the eligible student or parent, provided that the school the student is leaving gives notice by letter to all parents that it follows this practice.

MASSACHUSETTS ASTHMA ACTION PLANS (MAAP):

The tri-part Massachusetts Asthma Action Plans are available through the Massachusetts Health Promotion Clearinghouse. Plans are available in English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, Khmer, and Russian. They may be viewed and/or ordered online through www.maclearinghouse.com or by sending a FAX order form to (617) 536-8012. School nurses are encouraged to request that parents give the MAAP to the child's primary care provider for completion. (The Massachusetts Health Promotion Clearinghouse consumer information line is 1-800-952-6637.)

CARE OF THE CHILD WITH DIABETES IN THE SCHOOL:

The Massachusetts Department of Public Health (MDPH) School Health staff, Board of Registration in Nursing, school nurse leaders, and representatives from the Massachusetts School Nurses Organization, Joslin Clinic, MassSTART, Massachusetts Department of Education and parents' groups have begun meeting as a task force to address nursing practice issues as they relate to the care of the child with diabetes in the school setting. In an attempt to identify the issues, all school nurses will be asked to complete a brief survey relating to Type I and Type II diabetes. Surveys will be sent in the fall of 2002.

MANAGING LIFE THREATENING FOOD ALLERGIES IN SCHOOLS

The new publication from the Massachusetts Department of Education (MDOE) will be distributed to schools in the fall. This document takes a team approach to ensuring a safe school environment for children with life threatening food allergies. For more information contact Christanne Smith Harrison at 781/338-6934 or csmith@doe.mass.edu. This document is also available on the MDOE website.

REVISION OF THE REGULATIONS PERTAINING TO THE ADMINISTRATION OF EPINEPHRINE BY AUTO-INJECTOR TO STUDENTS WITH LIFE THREATENING ALLERGIC CONDITIONS:

The Massachusetts Department of Public Health is in the process of reviewing and amending these regulations to address before and after school programs. The date of the public hearing on the proposed amendments will be publicized.

REVIEW OF MASSACHUSETTS VISION SCREENING PROTOCOL:

The Commonwealth's current vision screening protocol is being reviewed. As part of this process, guidelines for the younger age group, preschoolers and kindergarten to third

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grade, will be addressed. Because the child's visual system is not fully mature until 9 or 10 years of age, it is of utmost importance that abnormalities be detected during these early years, when treatment may reverse or eliminate the visual problem. Early detection of treatable eye diseases can have far reaching implications for vision, general health, as well as educational progress. Please contact Dr. Jean E. Ramsey, Massachusetts Society of Eye Physicians and Surgeons, with any ideas or suggestions regarding the protocols: jean.ramsey@bmc.org.

EYE SAFETY FOR CHILDREN:

The Massachusetts Society of Eye Physicians and Surgeons (MSEPS) and the New England Ophthalmologic Association (NEOS) have available a PowerPoint presentation, **Eye Safety for Children**, developed by Dr. Paul Vinger, a nationally recognized expert in this area. It addresses the need for protective eyewear for school-aged children during athletic and recreational activities, shop, etc. If you are interested in having this presented and discussed in your school/district, please call the Executive Director of MSEPS, Leta Serafim, at (617) 426-2020. She will arrange for a local ophthalmologist to work with you and your staff.

SCHOOL HEALTH INDEX TRAINING:

The Coordinated School Health Program, a CDC collaboration between the Massachusetts Department of Public Health (MDPH) and the Massachusetts Department of Education (MDOE) to support comprehensive school health education and coordinated school health programming, offers no-cost training on the *School Health Index (SHI)*. The *SHI* is a self-assessment and planning tool developed by the CDC that enables schools to identify the strengths and weaknesses of their physical activity and nutrition policies and programs while developing an action plan to improve student health. Trainings last 2.5 hours and may be conducted at the school site. Please contact Michelle Zbell, MDPH Coordinated School Health Program Coordinator, at 617 624-5537 or michelle.zbell@state.ma.us for additional information and to schedule a training.

FY 2000 ADOLESCENT BIRTH DATA:

The FY2000 Adolescent Birth Data for the state and by community are now available: "Adolescent Births: A Statistical Profile Massachusetts – Supplement to Advance Data BIRTH". http://www.state.ma.us/dph/ose/publicat.htm The following three items may be of interest to schools: (1) teen births, (2) teen birth fact sheet, and (3) teen birth Power Point Presentation.

"YOU DON'T HAVE TO DO IT: A DISCUSSION PROGRAM FOR HEALTHY DECISION-MAKING"

The Massachusetts Department of Public Health (MDPH) Abstinence Education Media Campaign has recently produced an audio CD with a facilitator's guide. This two-part, interactive discussion program was created to assist youth advisors and health educators in communicating the benefits of sexual abstinence to middle school youth, covering issues such as respectful relationships and healthy communication with adults. Please contact Itege Bailey-Tummings, Program Coordinator at the Office of Adolescent Health and Youth Development, Massachusetts Department of Public Health, 250 Washington St. Boston, MA 02108 617/624-5479 for a free copy of the program, or to order other free abstinence education materials.

CATASTROPHIC ILLNESS IN CHILDREN RELIEF FUND (CICRF):

The Catastrophic Illness in Children Relief Fund Commission is accepting applications from families who are experiencing financial distress because of the expenses around a child's illness/condition. There are three eligibility requirements for the child: (1) less than 19 years old (2) a Massachusetts resident (3) at least 10% of family's gross annual income spent on the child's medical and related needs. For more information: www.state.ma.us/cicrf/ or Catastrophic Illness in Children Relief Fund, 250 Washington St., 4th floor, Boston, MA 02108-4619, Telephone: 800-882-1435.

SKIN CANCER PREVENTION RESOURCES:

The Centers for Disease Control has released *Guidelines for School Programs to Prevent Skin Cancer,* as well as a *Skin Cancer Module* developed for students to learn more about skin cancer and epidemiology. The module has multiple potential applications for Biology, other Sciences, and general Health Education classes within high schools and possibly some middle schools. Both resources are available through http://www.cdc.gov/nccdphp/dash/index.htm.

Project S.A.F.E.T.Y., a skin cancer prevention curriculum for grades 5 through 12, continues to be available ***free of charge*** by contacting Mel Rubin at the Massachusetts Melanoma Foundation, 617-232-1424 or **info@massmelanoma.org. All schools are encouraged to take advantage of these resources.**

Preparing for Infectious Disease Emergencies and Bioterrorism in the School Setting

Steve Fleming, Ed.M., Epidemiologist (with contributions from the Epidemiology Staff)
Massachusetts Department of Public Health, Division of Epidemiology and Immunization

The terrorist events of last fall highlight the importance of preparing for bioterrorism and other infectious disease emergencies. School health personnel may be the first to suspect an unusual health event in the community, and the first to identify an actual outbreak. Just the threat of bioterrorism can cause disruption, fear and panic. Schools with policies and procedures in place will be best able to respond to these challenges.

An infectious disease emergency is an event with one or more of the following characteristics: (a) significant public health impact, (b) infectivity and risk of transmission, (c) intervention necessary to prevent and control infection, and (d) fear and panic, sometimes widespread.

Many school health personnel have experience with infectious disease emergencies. An example is a student seriously ill with meningitis caused by *Neisseria meningitidis.* Close contacts must be identified and treated, and there may be widespread concern among parents, teachers, and the media.

In a post-9/11 world, preparing for infectious disease emergencies in schools may be as simple as providing health services to students, with enhanced awareness of the potential for an infectious disease emergency and bioterrorism. Or preparation may be more complex, involving school and community planning for a range of possible emergencies.

Bioterrorism is the intentional or threatened use of a biologic agent to hurt people, create fear and/or disrupt society. Bioterrorism may or may not result in an infectious disease emergency. As we learned last year, the threat of bioterrorism, or imagined threat, is sufficient to close workplaces, initiate HazMat team responses, and create fear. During the anthrax incidents, the State Laboratory Institute tested over 3000 items for anthrax. All results were negative.

ISSUES FOR SCHOOLS

Every community in Massachusetts is required by law to have a Local Emergency Planning Committee (LEPC). These groups should include representatives from public health, emergency management, public safety, hospital and medical communities, business and civic organizations, the local school district and school health.

Within schools, the comprehensive school safety plan should address a range of infectious disease emergencies. Planning should involve public health, public safety, and emergency management personnel. The plan should address such challenges as (a) maintaining essential school services with high absenteeism (staff and students), (b) communication with staff and students after school hours, (c) communication with media, and (d) guidelines for evacuation, or "shelter in place." Plans should be reviewed, exercised and updated regularly.

ARE YOU PREPARED? ONE POSSIBLE SCENARIO

On a Sunday morning, the school nurse, principal and superintendent receive phone calls at home from parents informing them of ill students and rumors of students being hospitalized. Fever, rash and listlessness are common symptoms. The callers express a number of concerns: *Has the flu season started early? Is this the return of the "mystery rash" which received nationwide attention during the spring of 2002? Should I keep my child out of school?*

SOME QUESTIONS TO CONSIDER

- If you are one of the people contacted on Sunday, do you take further action?
- Is there an existing plan to guide you?
- Do you have a way to communicate with key contacts from your home on a Sunday?

THE SCENARIO CONTINUES

On Monday morning, twenty percent of the students and several teachers have called in sick. Four students are in the hospital with syndromes, which do not appear to be life threatening. Parents, teachers and now reporters continue to express concern about the rash illness. Students and teachers are complaining about itching and shortness of breath. A TV reporter requests an interview with the superintendent.

MORE ISSUES TO CONSIDER

- What do you think might be happening in your community and school?
- Could this be an outbreak and should it be reported? To whom?
- Should the school be closed pending further investigation? Who can help you with this decision?
- Do you have back-up medical resources, if necessary?
- What is the role of public safety and emergency management?

CONCLUSION

The illness remains a mystery. During the week the rashes come and go with health care providers making no definitive diagnosis. School is closed for a day, while air quality tests are performed. The live TV interview is pre-empted by a story about an overturned truck on the Mass Pike. A week after the phone calls began, life returns to normal.

FINAL QUESTIONS

- How would this scenario change if students had become seriously ill?
- How would it change if a threatening letter had been received, describing a smallpox release into the school ventilation system?
- *Is your school ready for an infectious disease emergency?*

For more information, visit the Massachusetts Department of Public Health Web site, at mass.gov/dph.

VACCINES ARE GOOD, DISEASES ARE BAD

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As parental concerns about vaccine preventable diseases and their complications have waned, questions and misconceptions about vaccine safety have increased. This was highlighted by a recent national survey by Gellin et al.[1], which found that although the majority of parents supported immunization, 25% believed that too many vaccinations could weaken the immune system and 23% believed that children get too many immunizations. Another recent survey of school health personnel, including some in Massachusetts, identified similar concerns.

With that being said, the question on the minds of many parents when faced with vaccinating their children against disease is, "Are vaccines safe?" If you define "safe" as being free from any possible negative effects, then the answer is no. All vaccines do carry some degree of risk, as do all medicines. All vaccines have possible side effects. Although most of these side effects are mild, such as pain and tenderness at the injection site, some are more severe. When considering vaccine safety, the more important question should be, "Do the benefits of getting the vaccine (avoiding the disease) outweigh the risks (side effects)?"

VACCINE BENEFITS OUTWEIGH RISKS – AN EXAMPLE FROM HISTORY

Let's take a look at the original whole cell version of the pertussis vaccine, which historically in the U.S. had the highest rate of side effects. In Massachusetts since 1996, the newer acellular pertussis vaccine has been used with fewer side effects.

Some of the more severe side effects of the original pertussis vaccine included persistent inconsolable crying, high fever and occasionally seizures. For this reason many parents in Japan chose not to vaccinate their children against pertussis in the late 1970's and the government suspended its use in 1975. Within 3 years, the number of cases of pertussis rose from 400 to 13,000 and the number of deaths due to pertussis increased from 10 to 130. Although the side effects of the original pertussis vaccine could be relatively severe, no child ever died from the vaccine though many died from pertussis. This example from Japan demonstrates that vaccine benefit far outweighs the risk. When considering the risk of vaccines and the risk of disease, vaccines are the safer choice.

VACCINES, AUTISM AND OTHER DISEASES

But what about the reports that vaccines cause autism, diabetes, sudden infant death syndrome (SIDS), or multiple sclerosis? Many reports have suggested a link between vaccination and disease because of the timing involved with receipt of vaccine and disease onset. Just because one event precedes another, does not necessarily mean that the first event caused the second. Many of the studies that have made these claims have primarily looked at children who have contracted the disease and coincidentally were vaccinated. To determine if there is a link between vaccine and diseases, you must compare incidence of disease in vaccinated versus unvaccinated populations.

For example, what about the suggested link between MMR and autism? The study from England that started the MMR and autism debate was a report that looked at 12 children with neurodevelopmental delay (8 with autism) which developed within 1 month of receiving MMR vaccine[2]. This report failed to look at autism incidence in an unvaccinated population to see if the rate was the same as the vaccinated children. In a subsequent study, Dales et al.[3] did compare vaccinated versus unvaccinated children and found no difference in the incidence of autism between these two populations. Many other studies have been published with similar results contradicting the claim that MMR causes autism.

VACCINES AND THE INFANT IMMUNE SYSTEM

Parents are also worried that children may be receiving too many immunizations and that this could overwhelm their immune systems. A recently published review by Offit et al.[4] found that, while babies are receiving more vaccines than in the past, they are in fact receiving fewer antigens (125 today compared to 3,000 in 1980) due to the "purified" content of modern vaccines. In addition, Offit et al. report that infants' immune systems are capable of responding to as many as 1 billion to 100 billion different antigens.

SCIENTIFIC RESPONSE TO VACCINE SAFETY

In order to address questions about vaccine safety, federal government agencies have taken the lead with many vaccine safety research initiatives. One example is that an independent committee has been convened to review theories about immunization safety. The Institute of Medicine's Immunization Safety Review Committee consists of experts in the fields of pediatrics, neurology, immunology, internal medicine, infectious diseases, genetics, epidemiology, biostatistics, risk perception and communication, decision analysis, public health, nursing, and ethics. They have published a number of reports on different vaccine safety issues (www.iom.edu) and all have shown that the currently available data does not support a link between vaccines and a variety of diseases for which vaccines were blamed as the cause.

There is now a wealth of information confirming the fact that vaccines do not cause these diseases mainly by showing that the incidence of disease is not higher in vaccinated vs. unvaccinated children. For more information on vaccine safety, please see the "Immunization Resources" box in this newsletter.

[1]Gellin, B.G., et al. Pediatrics. 2000;106: 1097-1102
[2]Wakefield, A.J., et al. Lancet. 1998;351: 637-641
[3]Dales L., et al. JAMA. 2001;285: 1183-1185
[4]Offit, P.A., et al. Pediatrics. 2002;109: 124-129

Immunization Exemptions and Vaccine Preventable Disease Exclusion Guidelines in School Settings

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State laws requiring proof of immunization for school entrance have played a crucial role in increasing vaccine coverage among the nation's children and protecting them from serious vaccine preventable diseases. In fact, current school and child care immunization requirements have virtually eliminated outbreaks of vaccine preventable diseases among children in our state.

The responsibility for identifying students in need of immunization to ensure that they obtain the immunizations required for school entry rests with school officials, often school nurses. In Massachusetts, there are only two situations in which children who are not appropriately immunized may be admitted to school - children having medical exemptions and children having religious exemptions.

A medical exemption is allowed if a physician submits documentation that an immunization is medically contraindicated (e.g., for individuals who have anaphylactic reactions to vaccine constituents or are immunocompromised). This documentation may or may not include specific contraindications. A religious exemption is allowed if a parent or guardian submits a written statement that immunization conflicts with their sincere religious beliefs.

A recent survey found that many nurses in our state thought philosophical exemptions were acceptable. However, philosophical exemptions are **not** allowed in Massachusetts, even if signed by a physician. An example of an *invalid* exemption includes a written statement by parents that they refuse to vaccinate their child because immunizations are against their own personal or philosophical beliefs. Studies have shown that states with philosophical exemptions are more at risk for outbreaks of certain vaccine preventable diseases.

The law states that unimmunized children, who do not meet criteria for medical or religious exemption, "shall not be admitted to school" (MGL c76, s 15 and 15c, 105 CMR 220.000). However, the policies for exclusion of unimmunized or partially immunized children are developed by individual schools or school districts and are enforced at the local level. The one exception for exclusion of unimmunized or partially immunized children is in the case of homeless children, whereby they cannot be denied entry to school if they do not have their immunization records. (Please refer to the *News Briefs* section for more information.)

Persons who claim exemptions from immunization for any reason are at increased risk of contracting a vaccine preventable disease compared with immunized persons. Therefore, in situations when one or more cases of a vaccine preventable disease are present in a school, all susceptibles, including those with medical or religious exemptions, are subject to exclusion from school (105 CMR 300.000). These exclusion policies have been put into place in order to protect unimmunized, susceptible students, to protect others who may have had vaccine failure, and to prevent further spread of vaccine preventable disease.

Children who are unimmunized are not only at risk themselves, but pose a danger of transmission of infection to other children who cannot be effectively immunized because they are too young or because they have medical conditions that weaken their immune systems and are not adequately protected by vaccines. Due to medical advances, the number of children receiving treatment for leukemia, receiving organ and bone marrow transplants, and taking medications or having other conditions that weaken their immune systems is growing. In order to be protected, these vulnerable children must rely on the community to protect them from disease exposure through community-wide vaccination.

Through strict enforcement of immunization regulations and evaluation of vaccination coverage among students, children in Massachusetts will continue to be protected against vaccine preventable diseases.

Additional References:

1. Orenstein WA, Hinman AR. The immunization system in the United States: the role of school immunization laws. Vaccine 1999; 17 (Suppl 3):S19-S24.

2. Feikin DR. Lezotte DC, Hamman RF, Salmon DA, Chen RT, Hoffman RE. Individual and community risks of measles and pertussis associated with personal exemptions to immunization. JAMA 2000; 284:3145-50.

3. Salmon DA, Haber M, Gangarosa EJ, Phillips L, et al. Health consequences of religious and philosophical exemptions from immunization laws: individual and societal risk of measles. JAMA 1999; 282:47-53.

4. Gangarosa EJ, Galazka A, Wolfe CR, Phillips LM, Gangarosa RE, Miller E, Chen RT. Impact of the antivaccine movement on pertussis control: the untold story. Lancet 1998; 351:356-61.

20th Century Vaccine Impact and the Continued Importance of Routine Vaccination

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Vaccination is considered by the CDC to be one of the ten great public health achievements of the 20th century. Since routine use of vaccines began, the occurrence of many common diseases has decreased dramatically.

In May 1980, the World Health Organization declared the world free from naturally occurring smallpox. Polio has been eliminated from most parts of the world, with only 500 cases (provisional data) identified worldwide last year. Efforts are also underway to control measles, which causes approximately one million deaths worldwide every year.

As illustrated in the table below, an overall decrease of over 99% was observed in the number of cases of vaccine-preventable diseases reported in the 20th century. Although improved socioeconomic conditions, better nutrition, antibiotics and other environmental factors have contributed to the decrease in disease burden, they cannot explain the dramatic and permanent drops in disease rates observed after the introduction of vaccines.

Although vaccination has successfully and dramatically reduced morbidity and mortality in the United States, routine vaccination is still very important. Vaccines should continue to be administered for a number of reasons. Primarily, history has shown that decreased vaccination rates in many countries has subsequently led to increased levels of pertussis, diphtheria, measles, polio and other vaccine-preventable diseases. To avoid a resurgence of these diseases in the United States, it is imperative that high immunization levels be sustained.

Another important reason to continue to vaccinate is to protect those around us who are unable to be vaccinated. High immunization levels will provide community-wide protection so that diseases will be less likely to spread within the community, thereby minimizing the chance that unvaccinated individuals will be exposed. This phenomenon, known as herd immunity, is only successful when high immunity levels exist.

Routine vaccination has reduced vaccine-preventable diseases to very low levels in the United States; however, continued success depends on continuing to vaccinate.

IMPACT OF VACCINES IN THE 20TH CENTURY

	20th Century Annual Morbidity	2001 Provisional Total	Percent Decrease
Smallpox	48,164	0	100.00
Diphtheria	175,885	2	100.00
Pertussis	147,271	5,396	96.34
Tetanus	1,314	27	97.95
Polio (paralytic)	16,316	0	100.00
Measles	503,282	108	99.98
Mumps	152,209	231	99.85
Rubella	47,745	19	99.96
Congenital rubella	823	2	99.76
H. influenzae, invasive (<5yrs)	20,000 (est)	183	99.09
Total Cases	**1,113,009**	**5,968**	**99.46**

Table Source: Epidemiology and Prevention of Vaccine-Preventable Diseases, CDC 7th Edition. (Adapted)

Don't Scratch – Vaccinate!!

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Varicella, or chickenpox, has long been thought of as a relatively mild childhood disease. The illness typically presents with an itchy rash all over the body consisting of approximately 200-400 lesions and a high fever lasting 5 to 7 days. However, the threat of complications from varicella infection is very real. These include bacterial super-infection of skin lesions, invasive group A streptococcal infections (also known as 'flesh eating bacteria'), dehydration, pneumonia, hepatitis, encephalitis, cerebellar ataxia, and death. Prior to the introduction of the vaccine in 1995, there were over 11,000 hospitalizations (approximately two-thirds of which were in children) and about 100 deaths (almost half in children) out of the 4 million varicella infections estimated to have occurred in the U.S. yearly. Infants and susceptible individuals who are pregnant or immunocompromised are at increased risk for complications. Complications can occur in the fetus/newborn if a woman becomes infected during the first half of her pregnancy or a few days prior to and after delivery. Following infancy, the risk of death and complications increases with age. One in five adults who get chickenpox develop pneumonia that is fatal in up to 30% of the cases. Infection in school children can provide a source of exposure for susceptible family members at home causing missed work and/or school. Studies have shown that natural history of disease does not confer lifelong immunity among all people – 5% of children may develop chickenpox more than once.

Minimal risks are associated with receiving the vaccine; soreness and swelling at the sight of the shot are most common. Very few experience a fever and/or mild rash and rarely, seizures (less than one person per 1,000) or pneumonia may develop. Transmission of the vaccine-strain virus is extremely rare (three documented cases out of over 30 million doses distributed to date). Although a limited number of vaccine recipients may develop 'breakthrough' disease at some point, it is typically much milder (<50 lesions & often afebrile) than wild-type varicella. While 15% of those naturally infected develop shingles, varicella vaccine recipients have a three to four fold lower incidence. Available data from on-going studies have demonstrated that immunity from vaccination lasts at least 20 years, but is believed to be lifelong. Lastly, high vaccination rates help protect immunocompromised individuals and infants under one year of age who are unable to receive the vaccine. High immunization rates are necessary because variable use of the vaccine can cause pockets of susceptible individuals among adolescents and adults who are at increased risk of complications. Consequently, vaccination has been shown to be the safest and most effective way of achieving immunity and protection for all.

Vaccine Supplies Improving

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Several vaccine manufacturers have now increased production of their vaccines to meet the national vaccine demand for most of the childhood vaccines. However, there continues to be a shortage of pneumococcal conjugate vaccine (PCV7), and the Advisory Committee on Immunization Practices' (ACIP) interim guidelines remain in place. Although the shortages of DTaP, Td, and MMR never affected provider practices in Massachusetts, they did have an impact in many other states. However, sufficient supplies of these vaccines are now available in all states.

Wyeth continues to strive to meet the demand for PCV7. In Massachusetts, we are currently operating under the *moderate shortage* protocol. This means suspending the fourth dose in the series for all healthy children until further notice. The shortage of PCV7 is anticipated until at least the end of 2002. Please remember that all individuals whose vaccine is delayed must be placed on recall lists.

Merck has filled all of the back orders for varicella vaccine and the ACIP has now recommended a return to the normal infant immunization schedule of a dose at 12 to 18 months of age (CDC. MMWR 2002; 51:679).

The Massachusetts Department of Public Health Immunization Program appreciates your cooperation during these shortages and will continue to inform you with any changes to the current recommendations. If you have questions, please contact the Vaccine Management Unit at 617-983-6828.

The 4-Day Grace Period

Martha Badger, RN, BSN
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Massachusetts Immunization Program

On February 8, 2002, the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP) published new General Recommendations on Immunization in the Morbidity and Mortality Weekly (MMWR 2002; 51 [No. RR-2]:1-35). Included in this publication are new guidelines for what to do if an immunization is administered before the recommended minimum age or interval.

What is the 4-day grace period?

The ACIP now recommends that vaccine doses administered < 4 days before the minimum interval or age be counted as valid. Doses administered > 5 days before the minimum interval or age are considered invalid. The 4-day grace period also applies to MMR and varicella vaccines given before the 1st birthday. The 4-day grace period does **not** apply to live vaccines administered < 28 days apart, or to rabies vaccine given off-schedule, because data show immunogenicity is reduced in these situations.

Some examples of valid doses include: 1) MMR vaccine administered 3 days before the 1st birthday; and 2) Hep B-2 administered 26 days after hep B-1. These doses would not need to be repeated.

Some examples of invalid doses include: 1) Varicella vaccine administered 5 days before the 1st birthday; 2) Hep B-2 administered 21 days after hep B-1; 3) MMR administered 26 days after varicella vaccine; and 4) MMR-2 administered 27 days after MMR-1. These doses would need to be repeated. To determine when to give the next dose, use the pertinent minimum interval or age, and count from the last *invalid* dose.

How will the 4-day grace period be used?

In clinical practice, the grace period should be used as the last resort. The recommended age and interval are always preferred, and the minimum interval can be used to catch patients up. The grace period should **not** be used to schedule future appointments, but can be used if a patient is not up-to-date and is already in the office, in order to catch them up and to avoid missed opportunities for immunization.

Retrospectively, the 4-day grace period can be used to assess doses administered in the past to determine whether or not they are valid. It is now recommended that school nurses use the 4-day grace period when evaluating a school child's vaccination record to determine if it satisfies school entry requirements.

Use of The 4-Day Grace Period

- To schedule a future appointment: NO!
- When evaluating a vaccination record: YES!
- Client is in the office or clinic early: MAYBE!

Massachusetts Department of Public Health
Division of Epidemiology and Immunization

Translation Tables for Foreign Vaccines

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For assistance in translating foreign vaccine records, consult *Epidemiology and Prevention of Vaccine Preventable Diseases, 7th ed.* (The "Pink Book"), Appendix D, which is published by the Centers for Disease Control and Prevention (CDC). There are two tables that provide helpful information. *Table 1. Vaccines and Biologics Used in U. S. and Foreign Markets* offers a comprehensive list of available vaccine products or trade names used in the United States and foreign markets, along with the associated antigens, manufacturers, and county of origin. *Table 2. Translation of Foreign Vaccine-Related Terms* shows foreign vaccine terms, the English translation for each term, and the language of origin. Be sure to check both tables, as vaccine records may contain either vaccine (antigen) names or product/trade names.

Both tables are available for distribution through the MDPH regional offices. They are also available online. Download from the Minnesota Department of Health website: http://www.health.state.mn.us/divs/dpc/adps/forgnvac.htm, or follow the link from the CDC web page on The Pink Book: http://www.cdc.gov/nip/publications/pink, to Appendices, Appendix D: Vaccine Names, Storage & Handling, and Manufacturers.

Massachusetts Department of Public Health, Immunization Program

MDPH Immunization Program, toll-free number Monday through Friday, 9 a.m. – 5 p.m.	888-658-2850
Main Office, Jamaica Plain	617-983-6800
Metro/Boston Office,* Jamaica Plain	617-983-6860
Northeast Office, Tewksbury	978-851-7261
Southeast Office, Lakeville	508-947-1231
Central Office, West Boylston	508-792-7880
Western Office, Amherst	413-545-6600

*If you are in the city of Boston, you may also contact the Boston Public Health Commission at 617-534-5611.

MDPH Website: http://www.state.ma.us/dph/cdc/epiimm2.htm

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC), NATIONAL IMMUNIZATION PROGRAM (NIP)

National Immunization Information Hotline:
(Monday-Friday, 8 a.m. – 11 p.m.)
1-800-232-2522 - English,
1-800-232-0233 - Spanish, and
1-800-243-7889 - TTY (Monday-Friday, 10 a.m. – 10 p.m.)

Document Fax line: 1-888-CDC-FAXX

National Immunization Program web site: www.cdc.gov/nip

National Center for Infectious Diseases Travelers' Health:
www.cdc.gov/travel/ or
CDC Travelers' Health Hotline: 1-877-FYI-TRIP (1-877-394-8747)

OTHER HELPFUL IMMUNIZATION WEBSITES

American Academy of Pediatrics: www.aap.org/
Food and Drug Administration:
www.fda.gov/fdac/features/095_vacc.html
Immunization Action Coalition: www.immunize.org
Infectious Diseases Society of America:
www.idsociety.org/vaccine/index.html
Institute of Medicine: www.iom.edu
Institute for Vaccine Safety: www.vaccinesafety.edu/
National Coalition for Adult Immunization: www.nfid.org/ncai/
National Network for Immunization Information:
www.immunizationinfo.org
Vaccine Education Center at the Children's Hospital of Philadelphia: http://www.vaccine.chop.edu

Phase In Schedule 2002-2005 For Hepatitis B, Td, MMR, and Varicella Vaccines

	2002	2003	2004	2005
3 Hep B	K- 10 College: all health science; freshmen-sophomores	K- 11 College: all health science; freshmen-juniors	K- 12 College: all health science; freshmen-seniors	K- 12 College: all health science; freshmen-graduate
Td	7- 10	7- 11	7- 12	7- 12
2 MMR	K- 12	K- 12	K- 12	K- 12
Varicella	Child Care/Preschool, K- 3 and 7- 10	Child Care/Preschool, K- 4 and 7- 11	Child Care/Preschool, K- 5 and 7- 12	Child Care/Preschool, K- 12

IMPORTANT: IMMUNIZATION AND VACCINE SAFETY CONFERENCE

The University of Massachusetts/ Simmons College School Health Institute (SHI), in collaboration with the State Lab, will present a single day conference on immunization and vaccine safety on April 10, 2003 from 9AM to 3 PM at the Ramada Inn in Auburn. Please register through the SHI or call (413) 545-0066 for a registration form.

Vaccine Safety Information For Schools, Providers, and Parents

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The Massachusetts Immunization Program (MIP) has been actively promoting vaccine safety materials produced by the Vaccine Education Center of The Children's Hospital of Philadelphia (CHOP) during immunization assessments conducted at more than 400 pediatric provider sites in 2002. *Vaccines: Separating Fact From Fear*, a 27 minute video, addresses parents' concerns about multiple vaccine administration and dispels myths about vaccine-associated illnesses. This video can be used to educate parents, as well as staff. It is also an excellent way to begin dialog and discussion with groups concerned about vaccine safety. *The Facts About Childhood Vaccines,* is a tear sheet pad (includes 50 sheets), available in English and Spanish, with commonly asked questions about the need for and safety of vaccines.

The MIP, with assistance from local boards of health, plans to distribute the videos to all public libraries later this year or early in 2003. Tear sheets and order forms for the video and other CHOP materials are available at MDPH regional offices, as well as on the CHOP web site: http://www.vaccine.chop.edu

CONGRATULATIONS

The School Health Staff is pleased to announce that Anne H. Sheetz, RN, MPH, CNAA, Director of the School Health Unit of the Massachusetts Department of Public Health was selected by the American Academy of Pediatrics (AAP) Section on School Health to receive the Martin C. Ushkow Community Service Award. This prestigious Award, given in recognition of significant contributions to the field of School Health Services was presented at the 2002 National Conference and Exhibition (NCE) held on October 19-23, 2002 in Boston, MA.

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